

Status of Rural Sanitation and Hygiene in the Households of select Gram Panchayats, of Dindigul district, Tamil Nadu.

Obara Lawrence Obworo¹, Dr P. Anandharajakumar²

1. Obara Lawrence Obworo Research Scholar (Full-time PhD), Centre for Development Studies, School of Health Sciences and Rural Development Gandhigram Rural Institute-Deemed to be University, 624302, Gandhigram Dindigul District, Tamil Nadu
2. Dr. P. Anandharajakumar, Professor & Director Centre for Development Studies, School of Health and Rural Development Gandhigram Rural Institute-Deemed to be University, 624302, Gandhigram Dindigul District, Tamil Nadu.

Abstract

Sanitation and Hygiene plays a vital role in people's life in relation to promoting people's health and whole wellbeing of the society. There are various components which consists rural sanitation and hygiene ranging from waste management of both liquid and solid which may be bio-degradable or non-bio-degradable, safe drinking water, proper housing structure, food and personal hygiene, domestic as well as environmental hygiene (Durgaprasad et al., 1997).

For a society to develop including the interior rural areas, sanitation and hygiene ought to be given a priority. This will ensure health of people as well as that of the environment is improved and sustainable. The failure or success of a community's health is determined by the capacity to close all the sources of germs which if not prevented can be disastrous to people and the environment as a whole.

Though various strategies, schemes and efforts have been made by Indian central and state governments, private sector, NGOs, VOs and like mindedness, still one is able to observe a gap between the input and output which is an alarming sign. In this paper, the study analyses current state of rural sanitation and hygiene. Application of findings of the study can be significant for policy making and opportunity for further research.

Key words: Status, Sanitation, Sanitary complex, Hygiene.

1.0 Introduction

Sanitation and Hygiene plays a vital role in the people's life in relation to people's health and the whole wellbeing of any society [5]. Absence or inadequacy of sanitation facilities like those dealing with; solid and liquid waste management

centres particularly Individual household toilet (IHHT) and sanitary complex, proper drainage system, drinking water facilities and the like is primarily due to poverty and cultural inhabitations, and they are to be overcome by people participation mainly through the help of the

government and its policies. It's paramount to ensure privacy and dignity for all people using toilet facility to improve general hygiene and health of rural people particularly. [7, 4]

In these regard, the Central government of India in 1986 steered up by millennial development goals target, started to emphasize on the importance of water and sanitation through central rural sanitation programs (CRSP). Additionally, in 2001 the government of Tamil Nadu decided to construct Integrated Sanitary Complex for men and women in all the 12,618 Village Panchayats in the state, at a unit cost of 2.25 lakhs. [13, 4]

It's worthy to note that, the central government of India is gearing to be fully sanitized by 2nd October 2019 especially as far as open defecation is concerned. Hence since 1985 the central government has come up with sanitation schemes under different titles to ensure hygiene is achieved, beginning with TSC, Nirmal Abiyan to Swachh Bharat Mission. All this has been aiming at objectives like liquid and solid waste management, save drinking water and sanitation and above all they have been zeroing in at open defecation free environment and general household sanitation including rural areas. [13, 11, 9]

Amid all this strategies and enormous work the government is doing, the villages across Dindigul district, open defecation, careless disposal of waste materials among other environmental issues is still notable. Our research will analyse the status of rural sanitation in the households of selected panchayats in Dindigul district.

2.0 Components of Consideration

The essential consideration for provision of sanitation facilities in household ranges from environmental, community-specifically: physical, social and cultural factors. Provision of sanitation in India especially among the poor households has been facilitated by the central government under various schemes with different objectives to ensure hygiene is achieved. In this research we have considered major four variables discussed as follows:

I. Individual Household Toilet (IHHT)

This is a toilet which is available within the premises of an individual community member. Beneficiaries always are responsible for operation and maintenance of this type of facility. A completed household sanitary latrine shall comprise of a Toilet Unit including a substructure which is sanitary with water facility but in case of water scarcity dry pits are constructed.

II. Integrated Sanitary Complex (ISC)

Sanitary toilet complex is an infrastructure that is used by community and floating population. They take care of safe disposal of human waste with objectively providing toilet facility to enhance privacy and dignity. A community toilet is a facility which is built when there is no enough space available. Mostly used, owned and maintained by community members. Mostly the facility located within the community reach and it has utilities like toilet, bathing, washing clothes facilities among others depending upon their needs.

III. Collection, Storage & Use of Water (CSUW)

Collection storage and use of water is essential in human healthy, water consumed by man should be deemed safe. Improved sources enable many

households to access groundwater which is always protected from surface contamination. Ground surface water reduces exposure to faecal contamination and other water-borne pathogens. The difference with unimproved sources such as surface water or open dug wells are exposed to the surface and susceptible to pathogen contamination from free-flowing sewage which is freely available in community area. Improved may become contaminated during the transport and storage of the water supply. We need to occasionally check the quality drinking water. [1, 2, 3]

IV. Households Waste Management (HWM)

Household Waste management involves collection, transportation, disposal or recycling and monitoring of waste. The term is used to explain both the liquid and solid material waste generated by human activity. Waste management is essential to avoid adverse effect on environment and human healthy. In some cases waste is managed in order to get resources.



Figure 1.0 Sanitation Components

The study adopted descriptive research design to carry out a research over which intensive discussion and analysis of data is formulated to achieve the objectives. The research methodology has to be efficient to achieve objectives and minimize errors. In this study, description of data collection and analysis is conducted.

3.1 Data Collection and Sample Selection: An Interview schedule is designed and used to gather primary data from household respondents of the selected villages of Dindigul district. The researcher used systematic multistage random sampling to arrive at the households whose respondents were to answer questions administered to them. The sample size arrived at is three hundred and thirty households, which was determined using Slovin's formula.

3.4 Data Analysis Tools: The field data was analyzed using simple statistical tools such as: - percentages, Statistical Package for Social Sciences (SPSS) was also be used for consolidating and analyzing data and suitable

Scaling techniques like Chi-Square, One way Anova is employed to analyze the perception of

the users of rural sanitary infrastructures on their satisfaction and opinion as regard to various

sanitation components.

4 Result and Discussions

Table 1: Distribution of the study by Socioeconomic Demographic Profile

Category	Respondents	Count	Percentage
Sex wise	Male	150	45
	Female	180	55
Panchayat wise	Bodikamanvadi	145	43.9
	Kalikampatti	185	56.1
Age wise	18 to 30	64	19.4
	30 to 42	94	28.5
	42 to 54	82	24.8
	54 to 66	70	21.2
	Above 66	20	6.1
Education wise	Illiterate	12	3.6
		133	40.3
	SSLC	107	32.4
	11th - 12 th	29	8.8
	Diploma	35	10.6
	PG	14	4.2
Working sector	Government	19	5.8
	Private	203	61.5
	Self-employed	63	19.1
	MGNREGS	39	11.8
	Jobless	6	1.8
Total Family Income	Below 10,000	6	1.5
	10,000-20,000	175	43.8
	20,000-30,000	159	39.8
	30,000-40,000	47	11.8
	40,000-50,000	8	2.0
	Above 50,000	5	1.3

Discussion: Sex of the respondents is crucial to highlight gender representation, for their perception may defer. Age of the respondents of any study especially a social science one for age will influence on responses, for different age groups are likely visualize things differently. Age between 18 and 90 years is chosen for the study.

Education level of a community shows many forms of indicators including Human Development Index. On a different note, the type of faith people practice has an influence on people's lifestyle including taboos and believes which ultimately impacts ones way of life.

Economy of the society can easily be determined by the amount of income one receives and of course spends therefore knowing the income level it gives an idea family expenditure on daily needs.

Table 2: Distribution of Collection, Storage and Use of Drinking Water Practices

Hygienic practices	Response	Frequency	Percent
Water facility	Yes	303	91.8
	No	27	8.2
Own source	Yes	49	14.8
	No	281	85.2
Re- Purified method	Don't re-purify	182	55.2
	Boiling	72	21.8
	Chlorine	46	13.9
	RO system	30	9.1
	Don't re-purify	182	55.2
Frequent Cleaning of Storage tank	No tank	229	69.4
	Monthly	32	9.7
	Once in 3 months	32	9.7
	Once in six months	37	11.2
Drainage Availability	Yes	191	57.9
	No	139	42.1
Drainage Condition	No system	139	42.1
	Open	156	47.3
	Closed	35	10.6

Discussion: It's found that, 303 which are 91.2 percent households don't drinking water facility

within premises and 27 households which are 8.2 percent don't have water within.

It reveals that a whopping percentage of 73.0 which is 241 of the households have common tap water as the main source of drinking water indicating that the highest percentage depend on water transported from one point to another.

It reveals that 178 households which are 53.9 percent don't re-purify water before drinking and 152 households indicating 46.1 percent re-purify water before drinking. Purification and non-purification

are almost same indicating need for further awareness campaigns.

Cleanliness goes beyond personal hygiene, for that reason in order to avoid germs bleeding in and around water storage facilities cleaning water tanks needed but unfortunately a great percentage (69.4) of the households do not have overhead tanks.

Liquid waste has become a major concern as far as waste management is concern, therefore it's paramount to ensure liquid waste is directed into its proper disposal channel, hence proper drainage system is required.

Table 3: Household Waste Management Distribution of Households

Disposal practices	Response	Frequency	Percent
Solid Waste Disposal	Burying	58	17.6
	Open field	112	33.9
	Garbage collector	156	47.3
	Burning	4	1.2
Hazardous Waste Disposal	Burying	50	15.2
	Open field	107	32.4
	Garbage collector	159	48.2
	Burning	8	2.4
Kitchen Waste Water Disposal	Drainage system	88	26.7
	Open ground	200	60.6
	Agricultural field	31	9.4
	Soak pit	11	3.3
Stagnant Water Presence	Yes	130	39.4
	No	200	60.6

Discussion: Solid waste management is one of the emerging sectors due to ever growing materialism. Waste ranges from biodegradable and non-biodegradable. From the study most of the respondents prefer to give waste to garbage collectors who have a better system of recycling waste.

Hazardous waste is also mostly given to garbage collectors with throwing in open field getting second count hence need to develop an elaborate way of discouraging this method of disposing hazardous waste rather invent recycling technology.

Another waste is kitchen waste water; it's worthwhile to note that, 60.6 percent of the households' release their kitchen waste water into open ground, second method is represented by 26.7 percent, which accounts to the greatest share of disposing.

Sometimes due to lack of ability for percolation into the ground, topography of the land or lack of drainage facilities can encourage the presence of stagnant water around the households. This will turn out to be a fertile environment for dangerous insects to breed.

Table 4: Distribution of Integrated Sanitary Complex Practices

Sanitary practices	Response	Count	Percent
Sanitary Complex Usage	Do not access	203	61.5
	Yes	5	1.5
	No	122	37.0
Reason for not Using	Not applicable	203	61.5
	Own toilet	44	13.3
	Lack water	34	10.3
	Distance	17	5.2
	Maintenance	31	9.4
	Closed	1	0.3
	Sanitary Complex Satisfaction	Not applicable	203
Highly disagree	4	1.2	
Disagree	52	15.8	
Neutral	60	18.2	
Agree	11	3.3	
Sanitary Complex Location	Not applicable	203	61.5
	Very far	15	4.5
	Far	28	8.5
	Neutrally	41	12.4
	Near	21	6.4
	Very near	22	6.7
Sanitary Complex Security	Not applicable	203	61.5
	Insecure	20	6.1
	Neutral	79	23.9
	Secure	22	6.7
	Highly secure	6	1.8

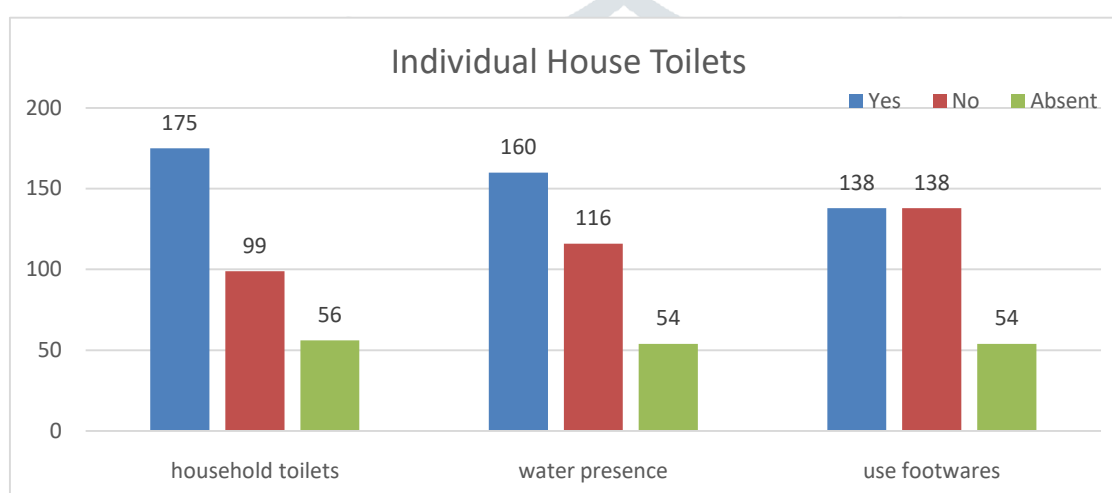
Discussion: The study shows 37.0 percent of the households are not using sanitary complex while 61.5 do not have access. Majority of the households do not use sanitary complex because they have own toilets. Infrastructure of sanitary complexes should be improved to attract more users.

It's evident that, 12.4 percent of the respondents said that sanitary complexes were located neutrally, 8.5 percent of the respondents said it's

far while 6.4 percent of the respondents said it to be nearby, finally 61.5 percent of the households do not access this complexes.

After analysis table 4 highlights that, 23.9 percent comprising of 79 respondents perceived the security level neutrally, while 6.7 percent of respondents said it's secure. In addition 7.9 percent each said, it's highly secure as well as insecure.

Figure 1: Distribution of Individual Household Toilets



Discussion: In areas where there is inadequate land, the Central and State governments of India have made effort to construct community toilets to cater for those who do not have individual household toilets. Table 4 indicates the number of households accessing them.

It can be highlighted that, 48.5 percent of households have piped water present in their toilets, 35.2 percent they don't have, and while 16.4 percent do not have toilet at

all. In future the government should ensure 100 percent piped water coverage to boost sanitation.

Sanitation awareness is essential, hence wearing foot ware while visiting sanitary infrastructures like toilet should be encouraged to avoid picking up germs. 54 households do not possess toilets, 138 respondents' state that they wear while 138 respondents do not wear.

waste including that of human excreta has been a major cause of ill health in the world.

The study identified major variables for consideration to ascertain the status of sanitation and healthy hygiene in Dindigul district. From the analysis of the result conclude that, the

Conclusion

Good sanitation practices can help prevent many threats to public health especially in developing countries like India. Consumption of contaminated drinking water, lack of personal hygiene, food hygiene, and improper disposal of liquid and solid

government has done a bit of work in enhancing infrastructures that will enable improved standards. Nevertheless, more campaigns need to be done to reach all classes of people. These can include the children, youth and adults in order to create awareness among the communities eventually achieve sustainable development.

References

- [1]. Planning Commission, India assessment (2002). Water supply and sanitation, A WHO/UNICEF Sponsored Study.
- [2]. Jim Wright, Stephen Gundry, Ronan Conroy (2004) Household drinking water in developing countries: a systematic review of microbiological contamination between source and point-of-use, *Tropical Medicine and International Health* 9 (1), 106–117.
- [3]. Thomas Brick, B. Primrose, R. Chandrasekhar, S. Roy, J. Muliylil (2004). Water Contamination in Urban South India: household storage practices and their implications for water safety and enteric infections, *International Journal of Hygiene and Environmental Health* 207, 473–480.
- [4]. N. Sofia (2017). Impact of Solid Waste on Environment and Health: A sociological study in Tirunelveli District of Tamil Nadu, Gandhigram Rural Institute, p, 235.
- [5]. WHO and UNICEF. (2013) Progress on sanitation and drinking water: update. WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation.
- [6]. Ministry of Drinking Water and Sanitation, Government of India (2012). Baseline Survey - All India Abstract Report. <http://tsc.nic.in/BLS2012/Home.aspx>.
- [7]. (2014) Kurukshetra A. *Journal of Rural Development Rural & Urban Sanitation*; 02, 4-20
- [8]. Indivar jonnalagada Sandeep Tanniro (2015). Rethinking governance of public toilets. *Journal of Economic & political weekly*. 2004; XLIX (48):41-45. 16. Jasdeep Karur Bedi, Ghuman RS, Bholara AS. Health and Impact of unsafe “Health and Economic impact of unsafe Drinking water a study of Ludhiana. *Journal of Economic & politically weekly*; (2), 23-26
- [9]. Dave McKenzie, I. Ray (2004). Household water delivery options in urban and rural India, Paper Presented at the 5th Stanford Conference on Indian Economic Development, CA.
- [10]. Planning Commission, India assessment (2002). Water supply and sanitation, A WHO/UNICEF Sponsored Study.
- [11]. World Bank (2008). World Bank study on review of effectiveness of rural water supply schemes in India, World Bank Policy Paper, World Bank, New Delhi.
- [12]. P. Durgaprasad, S. Srinivasan, V. Madhava Rao, P. Sivaram and R.R Hermon (2012). Components of rural drinking water and sanitation.
- [13]. <https://www.indiawaterportal.org/articles/guidelines-central-rural-sanitation-programme-and-total-sanitation-campaign-department>